

1000-955 PAT450 Technical Specifications

Electrical supply range

110 V and 230 V a.c.

Bond test

Open circuit voltage: 9 V a.c. $\pm 10\% \pm 0.1$ V

10 A Bond test current:

10 A rms $\pm 20\% \pm 0.5$ A into 0.1 Ω

25 A Bond test current:

25 A rms $\pm 5\% \pm 0.5$ A into 0.1 Ω

Earth bond resistance accuracy:

$\pm 5\% \pm 3$ digits (0 to 0.49 Ω)

$\pm 5\% \pm 5$ digits 0.5 to .99 Ω)

Earth bond resistance resolution:

10 m Ω (0 to 1.99 Ω)

Display range: 0 to 1.99 Ω

Adjustable test duration:

User selectable from 1 sec to 20 sec

Continuity test

Continuity test voltage:

4.0 V d.c. -0% +10%

Continuity test current:

200 mA -0% +10% ± 5 mA

Continuity resistance accuracy:

$\pm 5\% \pm 3$ digits (0 to 0.49 Ω)

$\pm 5\% \pm 5$ digits 0.5 to .99 Ω)

Continuity resistance resolution:

10 m Ω (1 to 19.99 Ω)

Display range: 0 to 19.99 Ω

Test duration: User selectable from 1 sec to 20 sec

Insulation test

Insulation test voltage:

250 V d.c. -0%/+25% open circuit

500 V d.c. -0%/+25% open circuit

(500 V d.c. across 0.5M Ω)

Insulation resistance accuracy (230 V):

$\pm 2\% \pm 5$ digits (0 to 19.99 M Ω)

$\pm 5\% \pm 10$ digits (20 to 99.99 M Ω)

Insulation resistance resolution:

0.01 M Ω (0.10 to 99.99 M Ω)

Display range: 0 to 99.99 M Ω

Test duration: User selectable from 1 sec to 1 minute

Substitute leakage test

Test voltage: 40 V a.c. $\pm 10\%$

Test frequency: Nominal mains 50/60Hz

Leakage current accuracy:

$\pm 5\% \pm 5$ digits

Leakage current resolution:

0.01 mA

Display range: 0 to 19.99 mA

Test duration: User selectable from 1 sec to 1 minute

Reading corrected to 230 V + 10% or 110 V + 10% a.c.

Differential leakage current

Test voltage: Nominal mains 110/230 V a.c.

Test frequency: Nominal mains 50/60Hz

Differential leakage current accuracy:

$\pm 5\% \pm 5$ digits

Differential leakage current resolution:

0.01 mA

Display range: 0 to 19.99 mA

Reading corrected to 230 V + 10% or 110 V + 10% a.c.

Touch current test

Test voltage: Nominal mains 110/230 V a.c.

Test frequency: Nominal mains 50/60Hz

Touch current accuracy:

$\pm 5\% \pm 5$ digits

Touch current resolution:

0.01 mA

Display range: 0 to 10 mA

Test duration: User selectable from 1 sec to 5 sec

Reading corrected to 230 V + 10% or 110 V + 10% a.c.

Operational test

Test voltage: Nominal mains 110/230 V a.c.

Accuracy: $\pm 5\% \pm 10$ digits (0 to 99 VA)

$\pm 5\% \pm 50$ digits (100 VA - 999 VA)

$\pm 5\% \pm 100$ digits (1000 VA - 3700 VA)

Resolution: 1 VA (0 to 3700 VA)

Display range: 0 to 3.99 KVA

Reading corrected to 230 V or 110 V a.c.

Results show load VA

Extension lead test

Test includes insulation and bond tests.

Polarity test voltage:

12 V

Polarity: Lead OK

Live neutral S/C

Live neutral reversed

Live/neutral O/C

Flash test

Flash test voltage: 1500 V a.c nominal for Class 1

3000 V a.c nominal for Class 2

Flash test current: < 3.5 mA short circuit @ 253 V primary supply voltage

Flash test breakdown current accuracy:

$\pm 5\% \pm 5$ digits

Flash test breakdown current resolution:

0.01 mA

Display range: 0 to 3.0 mA

Test duration: User controlled

Portable RCD test

RCD test voltage: Nominal mains 110/230 V

RCD test frequency:

50Hz

Test current accuracy:

-8% to -2% (1/2 x I)

+2% to +8% (1 x I, 5 x I)

Trip time accuracy:

$\pm 1\% \pm 5$ digits

Trip time resolution:

0.1 ms

Display range: 0 to 1999 ms (1/2 x I)

0 to 300 ms (1 x I)

0 to 40 ms (5 x I)

Fuse test

Test voltage: 3.3 V

Warning: Audible beep if fuse is OK

Safety

PAT400 series meet the requirements of IEC 61010-1: 2001

Test leads meet the requirements of IEC 61010-031: 2002

Creepage and clearances for 300 volts to Earth Category II

1000-940 PAT420 Technical Specifications

Electrical supply range

110 V and 230 V a.c

Bond test

Open circuit voltage: 9 V a.c. $\pm 10\% \pm 0.1$ V

10 A Bond test current:

10 A rms $\pm 20\% \pm 0.5$ A into 0.1 Ω

25 A Bond test current:

25 A rms $\pm 5\% \pm 0.5$ A into 0.1 Ω

Earth bond resistance accuracy:

$\pm 5\% \pm 3$ digits (0 to 0.49 Ω)

$\pm 5\% \pm 5$ digits 0.5 to .99 Ω)

Earth bond resistance resolution:

10 m Ω (0 to 1.99 Ω)

Display range: 0 to 1.99 Ω

Adjustable test duration:

User selectable from 1 sec to 20 sec

Continuity test

Continuity test voltage:

4.0 V d.c. -0% +10%

Continuity test current:

200 mA -0% +10% ± 5 mA

Continuity resistance accuracy:

$\pm 5\% \pm 3$ digits (0 to 0.49 Ω)

$\pm 5\% \pm 5$ digits 0.5 to .99 Ω)

Continuity resistance resolution:

10 m Ω (1 to 19.99 Ω)

Display range: 0 to 19.99 Ω

Test duration: User selectable from 1 sec to 20 sec

Insulation test

Insulation test voltage:

250 V d.c. -0%/+25% open circuit

500 V d.c. -0%/+25% open circuit

(500 V d.c. across 0.5M Ω)

Insulation resistance accuracy (230 V):

$\pm 2\% \pm 5$ digits (0 to 19.99 M Ω)

$\pm 5\% \pm 10$ digits (20 to 99.99 M Ω)

Insulation resistance resolution:

0.01 M Ω (0.10 to 99.99 M Ω)

Display range: 0 to 99.99 M Ω

Test duration: User selectable from 1 sec to 1 minute

Substitute leakage test

Test voltage: 40 V a.c. $\pm 10\%$

Test frequency: Nominal mains 50/60Hz

Leakage current accuracy:

$\pm 5\% \pm 5$ digits

Leakage current resolution:

0.01 mA

Display range: 0 to 19.99 mA

Test duration: User selectable from 1 sec to 1 minute

Differential leakage current

Test voltage: Nominal mains 110/230 V a.c.

Test frequency: Nominal mains 50/60Hz

Differential leakage current accuracy:

$\pm 5\% \pm 5$ digits

Differential leakage current resolution:

0.01 mA

Display range: 0 to 19.99 mA

Touch current test

Test voltage: Nominal mains 110/230 V a.c.

Test frequency: Nominal mains 50/60Hz

Touch current accuracy:

$\pm 5\% \pm 5$ digits

Touch current resolution:

0.01 mA

Display range: 0 to 10 mA

Test duration: User selectable from 1 sec to 5 sec

Operational test

Test voltage: Nominal mains 110/230 V a.c.

Accuracy: $\pm 5\% \pm 10$ digits (0 to 99 VA)

$\pm 5\% \pm 50$ digits (100 VA - 999 VA)

$\pm 5\% \pm 100$ digits (1000 VA - 3700 VA)

Resolution: 1 VA (0 to 3700 VA)

Display range: 0 to 3.99 KVA

Results show load VA

Extension lead test

Test includes insulation and bond tests.

Polarity test voltage:

12 V

Polarity: Lead OK

Live neutral S/C

Live neutral reversed

Live/neutral O/C

Portable RCD test

RCD test voltage: Nominal mains 110/230 V

RCD test frequency:

50Hz

Test current accuracy:

-8% to -2% (1/2 / x I)

+2% to +8% (1 x I, 5 x I)

Trip time accuracy:

$\pm 1\% \pm 5$ digits

Trip time resolution:

0.1 ms

Display range: 0 to 1999 ms (1/2 / x I)

0 to 300 ms (1 x I)

0 to 40 ms (5 x I)

Fuse test

Test voltage: 3.3 V

Warning: Audible beep if fuse is OK

Safety

PAT400 series meet the requirements of IEC 61010-1: 2001

Test leads meet the requirements of IEC 61010-031: 2002

Creepage and clearances for 300 volts to Earth Category II

1001-481 PAT410 Technical Specifications

Electrical supply range

230 V a.c. $\pm 10\%$

Continuity test

Continuity test voltage:

4.0 V d.c. -0% $+10\%$

Continuity test current:

200 mA -0% $+10\%$ ± 5 mA

Continuity resistance accuracy:

$\pm 5\%$ ± 3 digits (0 to 0.49 Ω)

$\pm 5\%$ ± 5 digits 0.5 to .99 Ω)

Continuity resistance resolution:

10 m Ω (1 to 19.99 Ω)

Display range: 0 to 19.99 Ω

Test duration: User selectable from 1 sec to 20 sec

Insulation test

Insulation test voltage:

250 V d.c. -0% / $+25\%$ open circuit

500 V d.c. -0% / $+25\%$ open circuit

Insulation resistance accuracy:

$\pm 2\%$ ± 5 digits (0 to 19.99 M Ω)

$\pm 5\%$ ± 10 digits (20 to 99.99 M Ω)

Insulation resistance resolution:

0.01 M Ω (0.10 to 99.99 M Ω)

Display range: 0 to 99.99 M Ω

Test duration: User selectable from 1 sec to 1 minute

Substitute leakage test

Test voltage: 40 V a.c. $\pm 10\%$

Test frequency: Nominal mains 50/60Hz

Leakage current accuracy:

$\pm 5\%$ ± 5 digits

Leakage current resolution:

0.01 mA

Display range: 0 to 19.99 mA

Test duration: User selectable from 1 sec to 1 minute

Differential leakage current

Test voltage: Nominal mains 230 V a.c.

Test frequency: Nominal mains 50/60Hz

Differential leakage current accuracy:

$\pm 5\%$ ± 5 digits

Differential leakage current resolution:

0.01 mA

Display range: 0 to 19.99 mA

Touch current test

Test voltage: Nominal mains 230 V a.c.

Test frequency: Nominal mains 50/60Hz

Touch current accuracy:

$\pm 5\%$ ± 5 digits

Touch current resolution:

0.01 mA

Display range: 0 to 10 mA

Test duration: User selectable from 1 sec to 5 sec

Operational test

Test voltage: Nominal mains 230 V a.c.

Accuracy: $\pm 5\%$ ± 10 digits (0 to 99 VA)

$\pm 5\%$ ± 50 digits (100 VA - 999 VA)

$\pm 5\%$ ± 100 digits (1000 VA - 3700 VA)

Resolution: 1 VA (0 to 3700 VA)

Display range: 0 to 3.99 KVA

Results show load VA

Extension lead test

Test includes insulation and bond tests.

Polarity test voltage:

12 V

Polarity: Lead OK

Live neutral S/C

Live neutral reversed

Live/neutral O/C

Portable RCD test

RCD test voltage: Nominal mains 230 V

RCD test frequency:

50Hz

Test current accuracy:

-8% to -2% ($1/2 \times I$)

$+2\%$ to $+8\%$ ($1 \times I$, $5 \times I$)

Trip time accuracy:

$\pm 1\%$ ± 5 digits

Trip time resolution:

0.1 ms

Display range: 0 to 1999 ms ($1/2 \times I$)

0 to 300 ms ($1 \times I$)

0 to 40 ms ($5 \times I$)

Fuse test

Test voltage: 3.3 V

Warning: Audible beep if fuse is OK

Safety

PAT400 series meet the requirements of IEC 61010-1: 2001

Test leads meet the requirements of IEC 61010-031: 2002

Creepage and clearances for 300 volts to Earth Category II